Calibration Report: Spectroradiometer s/n: 660 ECN: 1741127

7 June 2000

Kevin Larman Analytical Services & Materials, Inc. Hampton, Virginia

SUMMARY

Calibration date: 7 June 2000

Next Calibration due: 7 June 2002

A collection, analysis and calibration of data from Analytical Spectral Devices, Inc. (ASDI), Full Range Fieldspec Radiometer, has been completed. The calibration was performed by the manufacturer, ASDI. These data were collected by ASDI, on 7 June 2000.

Model: FR

Serial Number: 660

The instrument response files for each foreoptic are installed on the computer operating the instrument. Instrument response files are as follows: Ni660_6.RAW, 1i660_6.RAW, 5i660_6.RAW, 18i660_6.RAW, COS660_6.RAW.

Irradiance Standard Vendor, Lamp number and File Name, used for Irradiance and Radiance calculations: *Optronic Laboratories, Lamp S802*, LMP660_6.ILL

Reflectance Standard Vendor, Standard ID, and File Name, used for Radiance calculations: Labsphere, Target #12137-A, BSE660_6.REF (+/- 0.5% relative to NIST Reflectance Standard).

Application: The instrument response files are utilized by the computer operating the instrument at the time of data collection.



Spectroradiometer Certificate of Calibration

Unit and Calibration No.: FSFR 660/6

ANALYTICAL SPECTRAL DEVICES, INC.

Calibration Date: 06/07/00 Lamp No.: S802 Panel No: 12137-A			
Initial all applicable entries			
Wavelength Radiometric			
Foreoptics:	Bare Fiber 1 degree 2 degree 3 degree 5 degree	8 degree 10 degree 18 degree RCR UW/RCR	
All calibrations have been performed according to Analytical Spectral Devices' accepted procedures, using verifiable NIST-traceable irradiance, reflectance and wavelength standards.			
Calibration data resides on the ASD instrument's controlling computer's hard drive and/or the controlling software system disk. Instrument response files: NI660_6.RAW 11660_6.RAW, 51660_6.RAW, 81660_6.RAW, 181660_6.RAW, COS660_6.RAW			
Irradiance Standard Vendor, Lamp number and File Name, used for Irradiance and Radiance calculations: Optronic Laboratories, Lamp S802, LMP660_6.ILL (+/- 2.0% relative to NIST scale)			
Reflectance Standard Vendor, Standard ID, and File Name, used for Radiance calculations: Labsphere, Target #12137-A, BSE660_6.REF (+/- 0.5% relative to NIST Reflectance Standard)			
Sum of ASD radiometric error, with ASD 1% repeatability standard: 3.5% & 4.5% (Irradiance and Radiance, respectively).			
ASD Certified Calibration Engineer/Technician:			
Signature	Sharon V. King	Date 6/6/00	4
		5335 Sterli	ng Drive

5335 Sterling Drive Suite A Boulder, CO 80301 U.S.A. Phone: 303.444.6522 Fax: 303.444.6825 Web: www.asdi.com





